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VOL. XII.—Part 4. 1964

THE AUSTRALIAN NATURALIST

THE JOURNAL OF

The Australian Naturalists' Society

of New South Wales.

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The Australian Naturalists' Society

OF NEW SOUTH WALES

Council, 1963

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Vol. XII 1964 Pt. 4

NATURALISTS' SOCIETY OF NEW SOUTH WALES

STATEMENT OF RECEIPTS AND PAYMENTS
For the Year Ended 30th June, 1963

RECEIPTS	£	s.	d.	PAYMENTS	£	s.	d.
Brought Forward	139	14	2	Rent	22	0	0
Subscriptions	46	2	6	Insurance	4	19	6
Sales	4	19	0	Printing	50	4	1
Donations	11	19	0	Postage	15	0	4
Bank Interest	4	12	3	Affiliation Fee	3	2	0
				Petty Cash	4	12	11
				Balance in Hand	107	8	1
	£207	6	11		£207	6	11

LIST OF SPEAKERS

Oct.	1962:	Miss P. M. O'Brien, Trip to South Africa.
Nov.	„ :	Miss J. Cassell, Montague Island.
Dec.	„ :	Mrs. A. N. Croucher, Trip to North Western W. Aus.
Mar.	1963:	Mr. J. O'Dean, From Caloundra to Cape Shanke.
April	„ :	Capt. T. W. Webb, Sea Life and Habits.
May	„ :	Mr. G. P. Whitley, Swain Reef Expedition.
June	„ :	Mr. G. Tremlett, Continuation of his Trip to Europe.
July	„ :	Mr. J. deS Disney, Birds of East Africa.
Sep.	„ :	Mr. W. Fairlie-Cunningham, Cave Exploration & Speleological Activities.

LIBRARY NOTES

This year, 601 different books, journals and magazines have been added to our catalogue. Numerically, they comprise the following subjects: Anthropology 7; Botany 159; Conchology 7; Entomology 28; General 46; Geology 15; Herpetology 8; Ichthyology 12; Marine Zoology 94; Natural History 183; Ornithology 20; and Zoology 11.

Gifts have included a donation of five pounds from Miss Marjorie Davidson (to defray costs of Library Insurance),British Birds, Volumes 1-8, by the Rev. F. O. Morris, B.A. and Outlines of Nature in the British Isles, Volumes 1 & 2, from Mrs. A. N. Croucher and two modern entomological works from Mr. G. P. Whitley, F.R.Z.S., entitled "Australian Moths" by I. F. B. Common and "Insects of Australia" by E. Riek.

We are again grateful to the Australian Museum, Sydney, the National Museum, Melbourne, the Canterbury Museum of New Zealand, the Museums of Tasmania, the Field Naturalists' Club of Victoria, and the Field Naturalists' Society of South Australia (Inc.) for gifts and exchanges. "Marine Molluscs of Victoria" by J. H. Macpherson and C. J. Gabriel merits especial mention. It was a most generous gift from the National Museum of Victoria.

Again, we thank the Smithsonian Institution of U.S.A. for many valuable and interesting books and pamphlets, covering a vast range of sujects from various scientific and learned bodies. We hope that they will accept this as our formal expression of gratitude to them all.

C.V.N.

OBITUARY

EMIL HERMANN ZECK

By C. E. Chadwick

Recently members learned with the greatest regret that Mr. E. H. Zeck, a very highly respected former President and officer of the Society, passed away on 3rd September last. Mr. Zeck had been a prominent member of long standing and although ill health in recent years had greatly curtailed his activities he was well-known to all the older members.

Emil Hermann Zeck was born in Sydney on 16th November, 1891, and, except for six months spent in Mexico in 1926, spent all his life in the city. He entered the Public Service as a cadet entomological and biological artist in 1908 and in 1923 transferred to the New South Wales Department of Agriculture as an entomologist. He retired in October 1956. His official work covered a broad field and his wide knowledge was much in demand not only by his colleagues, but by numerous members of the public who virtually became his personal clientele. His duties included experimental work on the control of the green vegetable bug, thrips, aphids and coccids, attention to innumerable enquiries on the control of injurious insects and care of the Entomological Branch library.

In later years he made innumerable microscope slides of aphids and coccids, upon which he came to be regarded as an authority. His drawings earned him a reputation which was not only second to none in Australia, but made him well-known overseas. His first major undertaking was a series of about a dozen large framed drawings of insect pests which were widely shown throughout the State in 1927. Numerous drawings were made for the Department of Agriculture, many in colour. His descriptive work on Colydiidae and Dryopidae was well illustrated by his drawings. He contributed drawings to each issue of the Australian Encyclopaedia. He made a number of drawings in colour of common insect pests after his retirement from the Department of Agriculture.

Mr. Zeck was an active member of several scientific societies. In 1909 he joined this Society which was then known as the New South Wales Naturalists' Club. He was appointed a member of Council in 1923 and Hon. Treasurer in 1924-25 and 1925-26. He held the post of Honorary Editor of "The Australian Naturalist" from 1928 until 1960. He was a Vice-President from 1938 until his assumption of office as President from 1950 until 1958. In 1958-60 he was again a Vice-President. On his resignation from office early in 1960 he was granted honorary life membership "as a small mark of appreciation for the many years of faithful work for this Society which you have always done so graciously" (letter, Mrs. Croucher, 21/4/1960).

He held office in the Royal Zoological Society of New South Wales as Council member, Vice-President and President over the period 1939 until 1960, and was elected a Fellow of that Society for his services to Zoology.

He was a member of the Australian Institute of Agricultural Science and of the Linnean Society of New South Wales. He was a foundation member and the first honorary life member of The Entomological Society of Australia (N.S.W.). The latter Society, supported by The Naturalists' Society of New South Wales, nominated him for the Australian Natural History Medallion which he was awarded for the year 1961.

Mr. Zeck taught entomology at Hawkesbury Agricultural College and at Sydney Technical College over a period of many years and wrote a small text-book on entomology for his students.

Mr. Zeck's list of publications is a very long one. His first paper was on Myrmecophilous Insects and was published in the Australian Naturalist for 1917. Subsequent papers appeared in this journal, the Australian Zoologist and the Proceedings of the Linnean Society of New South Wales and the Agricultural Gazette of New South Wales. By far the greatest number of his papers dealt with insect pests and their control and appeared in the pages of the Agricultural Gazette from 1934 until 1956. These were in the form of monthly notes for primary producers, which were written in conjunction with N. S. Noble for the first six years; thereafter they were his sole responsibility.

Mr. Zeck was modest and unassuming at all times and these characteristics combined with his wide knowledge accounted for the esteem in which he was held. He was, all the same, quite meticulous in regard to inaccuracies in fact and expression and would not pretend to knowledge he did not possess, as was often in evidence when in reply to a request for an identification his reply was "I will not commit myself".

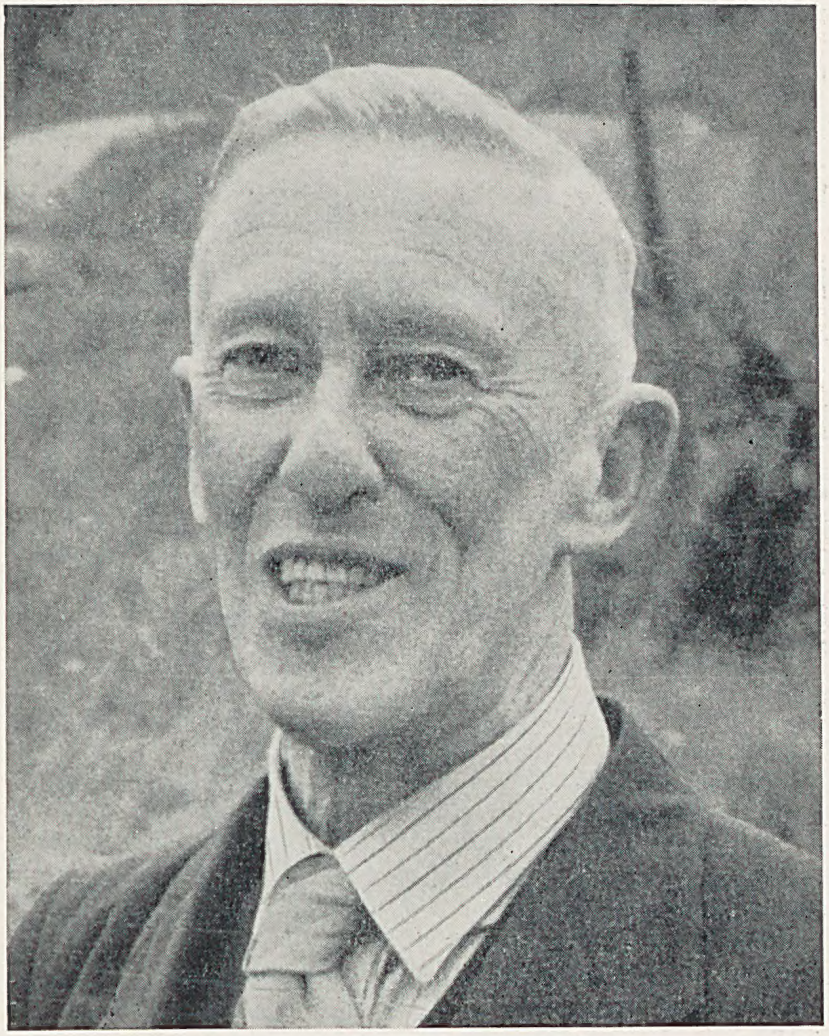
Mrs. Zeck shared her husband's interest and was of the greatest assistance to him. Her prior death on 3rd November, 1959 must have been a serious blow to him in his later years. His son, Dr. Paul Zeck, survives him.

BIRD NOTES: OUR PEEWITS

By Kathleen English

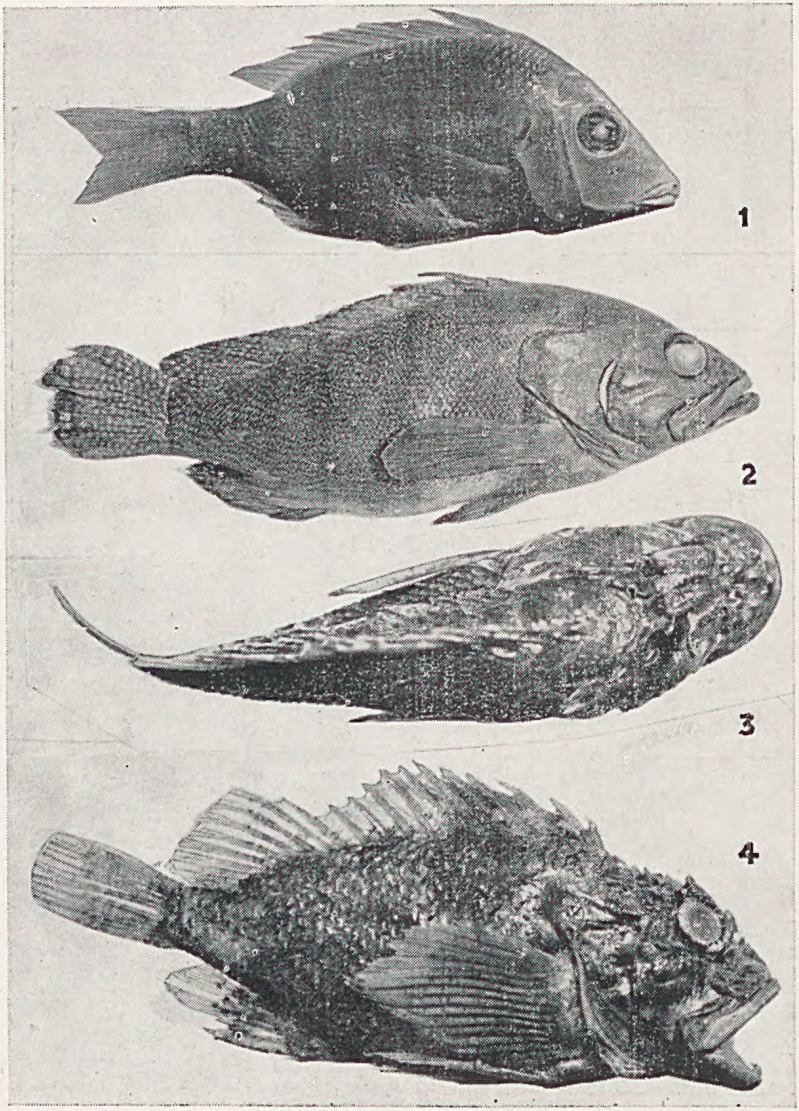
For some years our garden at Roseville has formed part of the territory of a pair of Peewits or Magpie Larks, those graceful birds with neat black and white plumage, a species of Australian native birds which have become successful suburban dwellers and can hold their own against the aggressive introduced birds which have settled around Sydney.

In the Spring of 1957 our pair had a nest in a tall gum tree in a paddock near by and from our back verandah we often watched them flying to and fro. On October 5th or 6th there was a bad storm with very strong winds and a young bird was evidently blown out of the nest, for on October 7th, we saw it staggering after a parent, with a Currawong following behind. The next eve-



THE LATE EMIL H. ZECK.

Photo: Ray Henning.



Fishes (See pages 7 to 9)

Photos: H. Hughes.

ning we found the young Peewit alone on its back in the grass, too weak to stand, so we brought it home knowing even if it survived the night outside the Currawong would have had it next day. The parents had done all they could, but they still had a babe in the nest to guard and feed.

After a few days in a basket the young bird was put daily on the lawn in a coop; later it was left there day and night. We dug for worms and curl grubs to feed our charge, but the ground was dry and we could not find much, so we fed it on meat and were grateful when some days later the parents brought the other young one on to the lawn. As well as feeding it they fed our "Pettie" through the wire of the coop. We were told that Peewits would eat boiled rice so each day after that we put out a saucer full of cooked rice topped with grated cheese or chopped raw meat and Percy and Mrs. Percy ate it and fed it to their young. The cheese or meat was picked out first and the rice went slowly afterwards, but it was all gone by the end of the day.

We had proved very useful and Percy accepted us as friends and from that time permitted us to assist him in feeding both the young birds until Pettie grew strong enough to be freed, but for a long time Mrs. Percy viewed us with undisguised suspicion.

Strangely the little captive would perch on our hands and was unafraid while weak, but grew wilder as her wings grew stronger.

The 1958-1959 summer was a very special one for the Percies for they raised four broods, first of three young, then two, two, and another three; ten young Peewits in one season. At the end of the summer the parents were worn out, and so were we for we had to share in the feeding each time.

After the storm in '57 another tree was chosen for the nest, a tall gum tree much nearer our house. We could see the nest from the back verandah and from the garden and quite obviously the birds could see us and as they became more friendly one would come floating down whenever anyone appeared, and usually we had some morsel ready, meat, cheese or insect.

Peewits are insect eaters and each pair of birds feeding themselves and their young must take an enormous toll of insect life and we humans should be very grateful for the work they do. We heard them out hunting at first light in the morning and they were still at it in the evening when it was almost too dark to see. We have seen them catch and eat grasshoppers, crickets, cockroaches, moths, caterpillars, grubs, beetles, small cicadas, small crustaceans, spiders and centipedes to mention only some of their prey.

In the garden were three wood blocks, cut from a tree trunk, useful as rests for garden tools, etc., and useful also as shelters for many small creatures of the soil that formed part of Percy's diet. If he was hunting in the garden and we overturned a block he came running, not flying, he ran to see what was there, caught anything in sight then did a sort of shuffle dance on the soft soil; he did not scratch like a domestic fowl, but by turning round and round and shuffling his feet he disturbed anything that might be hiding and quickly picked up whatever appeared.

In the 1959-1960 summer they reared three broods, only one in the first then two, then three, and it was the third lot of young ones that Percy fed with a funnel-web spider and a large centipede caught beneath one of the stumps we overturned for him.

For some time we had been puzzled by the behaviour of the parent birds at the nest. We knew they took turns at sitting on the nest and hunting for food whilst the eggs were incubating and that later on they flew to the nest with insects which were placed straight into the gaping mouths of the young. There was a period however, when we were quite sure the eggs had hatched but the parents, returning from hunting, still went on to the nest at once. Then we noticed that after sitting for a short time the bird stood on the side of the nest and appeared to be preening the breast feathers, but this happened so frequently that at last we came to the conclusion that when the nestlings were very young the parents must feed them by regurgitating partly digested food and that it was this action we had thought was the breast preening.

The 1960-1961 summer was a bad one for the Percies for not only did they fail to rear any young, but they both met with accidents and were partially crippled.

They built as usual early in the season, they always appeared with mud on the breast feathers when building, for the nest was made of mud, but a Currawong tore down that nest just as it was finished. They built again at once and we think they were sitting on eggs, but there must have been another tragedy for there were no young. They tried again without success, then Mrs. Percy vanished and we feared she must have been killed. However, later she came back with one leg almost useless, a broken thigh we thought. She was very ready to be fed and came regularly for cheese or meat. Gradually she gained the use of her leg though it remained stiff and deformed. Percy meanwhile had a thread twisted round his feet, he was hobbled and could hardly walk or perch. Fortunately he managed to break the thread and to remove it all from one foot, but the other was tightly bound and he could not get it freed.

We know that neither of them could have survived had they not been fed for they were unable to hunt for themselves for a time.

By mid-winter they were looking plump and well, their neat black and white plumage at its best; they came several times a day demanding cheese and were promptly obeyed.

In 1961 we know two clutches were hatched but the Currawongs had one lot and the second lot perished in stormy weather. Again they built and three young were hatched but early in January, I saw some birds fighting and found two Peewits lying on the ground locked in combat, and from that day Percy has disappeared. Mrs. Percy continued to feed the young birds and she was much tamer, standing on our hands to take the cheese, but about the end of January she and the young ones disappeared.

We had known our pair of Peewits for nearly five years, but they were becoming aged birds; they were also partially crippled and as they did not return to their special territory we presume they were killed by younger birds.

No other Peewits have moved into the vacated territory though several have come and stayed for a few days and now in the winter of 1963 their place has been taken by two magpies.

NEW RECORDS OF FISHES FROM AUSTRALIA

By Gilbert P. Whitley, F.R.Z.S.

(Plate 1, Figs. 1-4)

Several genera and species of fishes are identified from the Northern Territory, Queensland and New South Wales for the first time as the result of identifying specimens received at the Australian Museum over recent years. Figures of some holotypes are presented.

Myrichthys maculosus (Cuvier, 1816). One specimen from Green Island, off Cairns (Mr. and Mrs. M. Kota). Austr. Mus. regd. No. IB.5256. New record for Queensland and Australia.

Lycodontis thyrsoideus (Richardson, 1845), recorded from "East coasts of Australia", has been figured from Caloundra, Queensland (Whitley, 1951, Proc. Roy. Zool. Soc. N.S.Wales 1949-50: 62, fig. 8) but can definitely be listed from New South Wales since an Australian Museum party obtained one by rotenone in a rockpool at Minnie Waters on 2nd Nov. 1963 (Austr. Mus. regd. No. IB. 6832).

Uraspis uraspis (Gunther, 1860). One from Townsville District (Mr. G. Coates). No. IB.5441. New record for Queensland.

Epinephelus tukula (Morgans, 1959). One, 20½ inches long, from Alligator Creek, Townsville (Mr. G. Coates). No. IB. 6357. New record for Queensland and Australia.

Megaprotodon strigangulus (Gmelin, 1789). One from Heron Island in the young '*trifascialis*' colour-phase. No. IB. 6351. New for Queensland.

Pomacanthodes imperator (Bloch, 1787). One, 11 inches long, from Port Stephens ("Newcastle Neptunes" spear-fishing club), No. IB.5276, constitutes a new record for New South Wales.

Chaetodontoplus personifer (McCulloch, 1914). One specimen (Austr. Mus. regd. No. IB. 5277) from Port Stephens, collected by the "Newcastle Neptunes", is 9¼ inches long and new to the fauna of New South Wales. Colours of a Queensland specimen (1A.852) from Grassy Island, Whitsunday Passage, were described by the late E. Rainford as, "Body, dorsal and anal black. Yellow patch on throat; another small one on top of head. Pectorals black, edged with yellow. Caudal yellow, edged with black".

Platyglossus notopsis (Cuv. & Val., 1838). A young fish from a rockpool, Minnie Waters, 2 Nov., 1963. (No. IB.6846). New record for New South Wales.

Gomphosus caeruleus (Lacepede, 1802). One from Rib Reef, near Townsville (Mr. G. Coates). No. IB. 6360. New record for Queensland.

Congrogadoides spinifer (Borodin, 1933). Two small examples (No. IA. 4297) taken by the late A. Livingstone at Darwin in 1929 constitute a new record for the Northern Territory.

Teuthis fuliginosus (Lesson, 1831). One from Port Stephens ("Newcastle Neptunes"). No. IB. 6507. New record for New South Wales.

Calleleotris strigata (Broussonet, 1782). One from Manly (Mr. D. Stuckey). No. IB. 6477. New record for New South Wales.

Eviota viridis (Waite, 1904). One (No. IB.6847) from rockpool Minnie Waters, 2nd Nov., 1963. New record for New South Wales.

Arenigobius frenatus (Gunther, 1861). Three from Southport from Mr. Melbourne Ward (Nos. IB.7382-3 and 7387) and from Dunwich, Moreton Bay from Miss P. V. Conlu (IB. 5226). New record for Queensland.

Yongeichthys leftwichi (Ogilby, 1910). One from Spring Cove, Manly; 14 April, 1962 (Dr. D. Francois' collection). New record for New South Wales.

Ctenotrypauchen microcephalus (Bleeker, 1860). One from Albatross Bay, Wiepa District, Gulf of Carpentaria. No. IB. 6443. Another from Newell Bay, near Mossman. No. IB. 6871. New record for Queensland and Australia.

Remoropsis brachypterus (Lowe, 1839). One from the gillchamber of a Striped Marlin swordfish caught 20 miles off Sydney by Mr. R. Dyer, 31st March 1961. No. IB. 5230. A second example from the gill-chamber of a Black Marlin, off North Head, Sydney, 30th January, 1963 (Mr. P. Goadby). No. IB. 6353. New record for New South Wales. This is probably the unnamed "new species" with 16 laminae from a swordfish from Broken Bay, recorded in the Illustrated Sydney News, 11th March, 1854.

Neosebastes incisipinnis (Ogilby, 910). One (No. I.B. 6294) trawled in October 1962 from 28 fathoms, off Ballina, was obtained by the Australian Museum Swain Reefs Expedition. New record for New South Wales.

Sufflamen fraenatus (Latreille, 1804). One from a fish-trap in about 35 to 40 fathoms due East off Coff's Harbour, July 1961 (Mr. P. J. Doyle) and another from Sydney Fish Markets (Mr. J. Woore), October, 1958. Austr. Mus. regd. Nos. I.B. 5300 and 4131 respectively. New record for New South Wales.

Amanses howensis (Ogilby, 1889). One (No. IB. 6396) found floating under a box at the entrance of Port Hacking on 20th February 1963 and presented by Mrs. J. W. Evans. New record for New South Wales and Australia.

Four little-known fishes are here figured (plate 1) from type-specimens:
(1) *Lethrinus viridus* Whitley, 1932, from Cape York Queensland; (2) *Epinephelus slacksmithi* Whitley, 1959, from Heron Island, Queensland; and (3) and (4) *Scorpaena grandisquamis* Ogilby, 1910, from North West Islet, Queensland. This is a new synonym of *Parascorpaena aurita* (Ruppell, 1838).

CAMOUFLAGED FISH FROM NEW CALEDONIA

A remarkable example of camouflage is shown by the fish shown in the photograph which we have received from Dr. R. Catala (plate 2) of the Aquarium at Noumea, New Caledonia. Not only is the colour-pattern disruptive of the fish's outlines, but it has skinny flaps and tentacles to help conceal it from its enemies. The species, *Rhinopias frondosa* (Gunther) is new to the New Caledonian fauna.

— G. P. WHITLEY

NEW DATA ON THE MOTH, NEOLA SEMIAURATA

(Plate 3)

On 31st March, 1962, during our outing to Waterfall, Mr. Ray Henning observed about one dozen large, smooth-skinned caterpillars defoliating a Sunshine Wattle (*Acacia botrycephala*). He took several excellent photographs, and I captured one larva for breeding purposes. It was three inches long, pinkish-brown in colour, and of rather grotesque shape.

Dorsally, there were bristles arranged in pairs from its smallish head to its solidly built tail-end, which also carried armament above in the form of a spike inclined at about 45 degrees towards the head. The sides of the caterpillar were dotted also with pretty little spots in groups of five.

On the 3rd April, I took it to the Museum, but it was not in their records, so back home it went. Two days later, it spun a loose, silken shelter, with a few dead leaves incorporated. It also shrank to about one quarter of its original size, and faded to a sickly, pallid hue.

Not much later, it pupated within a beautiful, smooth, brown chrysalis Nothing more happened until 18th September, 1962, when a moth emerged after one p.m. At first it held its blackish wings closely against the sides of its body, in roof-like fashion. The wings were serrated at the sides and were slimly stream-lined. When spread, the black forewings spanned at least 2½ inches revealing the much smaller straw-coloured hindwings. The fairly solid abdomen was straw-coloured, too. The filiform antennae were a light brown, and the dark eyes brown and beady. Brown shades predominated on the legs.

Mr. D. K. McAlpine examined this moth on the 20th September, at the Museum, and kindly identified it as *Neola semiaurata* Walker, of the family Notodontidae. Although there were plenty of specimens of the moth in the cabinet, nothing was known of the larva or its habits, so he suggested we publish this brief history in "The Australian Naturalist", together with Ray Henning's fine photo.

— C. V. NATHAN.

THE SABRE-TAIL MYSTERY

On 10th January, 1962, nine smooth, white eggs were found neatly arrayed on the back of a fern frond (*Culcita dubia*). Soon after collection, they assumed a bluish-white colour, similar to that of starlings' eggs, but three days later they reverted to their original white, with the addition of two tiny reddish spots at the apex of each.

Two further days elapsed and a minute, black, aeroplane-shaped marking appeared, headed towards the gap between the red spots.

Before 6 a.m. on the 16th January, a bug nymph had hatched; it was followed by three next-of-kin by 7.20 a.m. Within an hour their backs darkened in colour, this colour persisting in the front half of the body, but by noon the abdomen had gone off-white in shade. All nine were now out, and a white spot was obvious at each side of the abdominal base.

For a few days they remained clustered round the empty egg-shells then, on the 20th, at 1 p.m., I saw what appeared to be a fat red mite eating one of the tender nymphs. Hurriedly it was extracted from the jar and hurled away. My eyes had deceived me, however, because a little later I perceived that the remaining eight had all gone salmon-pink on their front halves, at the same time retaining their black abdomens. They seemed to be helping each other to shed their garments and reminded me of corpulent sun-bakers clad in black trunks and scorched pink from waist to head. By 7 p.m. they had ALL GONE BLACK AGAIN, with a few white spots on the abdomen.

Next day I saw that each nymph had a long, black sabre-like "tail" projecting backwards from between the hind legs. These proved to be their sucking beaks, which were absurdly long in comparison to their immature, rotund trunks. By 1 p.m. they were well on the move, and quite pugilistic if they collided head-on. Unfortunately, they all died at night on the 24th January.

Dead specimens were shown to Mr. C. N. Smithers, Curator of Insects at the Australian Museum, but they were "unknown for the time being."

These records narrated above were filed by me and time shifted

to 11th January, 1963, on which day I captured a brown Pentatomid bug on a shoot of Scrambling Lily (*Geitonoplesium cymosum*). This bug had originally been identified for me as *Antestia orbona* by Mr. E. H. Zeck, then President of our Society. On the 13th it laid two neat rows of white eggs, seven in each, so I checked the mother's identity with Mr. Smithers. It was still *Antestia orbona*.

Keen was my interest on 16th January when red spots began to appear at the tops of the eggs. History was repeating itself, and the "aeroplane" duly arrived. On the 19th all fourteen eggs hatched and by the 23rd every nymph carried a 'sabre'. The life history of *Antestia* was at last revealed.

— C. V. NATHAN

"THE BUSH"

By A. Croucher

We frequently have outings into the "Bush", but do we know how to recognise its type? Is it woodland, sclerophyll, wet or dry? A few hints might help us to recognise it on outings and encourage members to study the ecology of the bushland around us.

Trees are greater than 25 feet in height and have a single trunk. Forest trees have long trunks and shallow crowns, but woodland trees have shorter boles and deep crowns. Shrubs have many woody stems from one base and may attain a height of 25 feet. Herbaceous plants vary widely but are never lignified.

The form dominating an area depends on several factors, chiefly climate, soil and topography.

Forests are found in areas of high humidity. They consist of trees with long boles and shallow flat topped crowns interlaced to produce a closed community. The type of forest is determined by climate, for instance cold areas produce conifers and gymnosperms, but some deciduous types also appear, as well as shrubs, herbs (including orchids), ferns and lycopods. In less severe regions such as Tasmania dominant species are beech, etc., and because considerable periods of the year limit the maintainance of leaves on the trees there is a well developed shrub and herb layer. Rain Forest is found in warmer parts of temperate and torrid zones. The nearer the equator the wider the variety of trees and larger leaves. This forest is characterised by lianes and epiphytes.

Temperate Rain Forest in the cooler regions has limited lianes and epiphytes and the underlying stratum is sparse. Mosses and liverworts are prolific. Ground stratum of ferns, herbs and mosses is sparse. In National Park rain forest usually occurs in well protected positions at the bottom of deep gullies which have cut into the Narrabeen Shale. The valley affords protection from drying winds. The trees are softwoods such as drimys, sassafras, ceratapetalum apetalum and palms (livistona) are dispersed among them.

Epiphytes including ferns are on tree trunks, and there are long tangles of lianes reaching to the ground.

Wet sclerophyll forest contains very tall trees whose crowns interlace. In National Park, wet sclerophyll is on the slopes of gullies facing north, not far from rain forest, but on sandstone soil. It is denser at the lower end of slopes. The trees may reach 100 feet with girth 2-4 feet. Dominant species are blackbutt (*Eucalyptus pilularis*), loranthes prevalent on its branches. A few poorly developed lianes and epiphytes are to be found. Palms, ferns, herbs are all well developed. Generally there is no shrub layer but some casuarina.

Dry sclerophyll has an interlaced canopy but has less cover than wet sclerophyll. In National Park it appears on shallower soil in more exposed slopes. *Angophora costata* is dominant and grows to 80 feet, averaging about 60 feet. There are no lianes or epiphytes and the shrub layer is almost absent. However the herbaceous layer to 18 inches covers about 70 per cent. of the surface. Here are found doryanthes, xanthorrhea, eriostemom, actinotus, pultenea, dodonea, ferns, lichens and moss on exposed rock.

On the tops of slopes or sheltered parts of plateaux are the woodlands. Trees in different forms are dominant. They have short bodies, and deep crowns, rounded and loosely interlaced, or open. These form a protection for the lower plants. In savannah woodland dominating species are widely separated from one another, casuarina, banksia, angophora and eucalyptus all appear as well as hakeas and acacias.

Heath is a closed community formed from medium to small shrubs. These appear on exposed plateaux and may be 5-6 feet tall. They include, *Persoonia petrophila,* Leptospermum, leucopogon, cryptandra, dillwynia, epacris, isopogon, phyllota, pultenea, hakea, banksia, casuarina, small eucalypt, xanthorrhea and acacia. Proteaceae family dominates but myrtaceae, legumes, and epacrideae are also common.

There are fenlike areas in National Park, usually in flat regions and where drainage is poor. Heath appears on its periphery and in poorer areas, xanthorrhea, hakea, sprengelia, viminaria and sedges appear. Drosera appear on the soil and some algae may also appear.

QUO VADIS, ORCHID?

Back in 1952 C. V. Nathan, with the acknowledged assistance of the late Mr. Watson and Alan Willows, published an interesting small brochure on the flora and fauna of the Vaucluse (Sydney) District. With the much-to-be-encouraged outbreak of district histories from publishers of recent years, it would be a really valuable adjunct for similar natural history lists of those places to be compiled. Unfortunately, students of natural sciences in the metropolitan and semi-rural districts seem to be numerically fading with the number of plant and animal species that are bowing out of our



Camouflaged Fish from New Caledonia (See page 9)

Photo: R. Catala.



Caterpillar of the Moth, *Neola semiaurata.*

(See pages 9 to 10)

Photo: Ray Henning.

lives. It would be interesting to know the present day census of the area so ably covered by Nathan just a decade and one-tenth past.

Recently glancing over the lists of the Vaucluse District I was surprised to note the complete absence of any of the orchid family The Orchidaceae is one of the largest groups, in numbers of species, in the vegetable kingdom. In view of this, one would perhaps suspect that species may have been overlooked, especially those of the terrestrial family. And the very common *Liparis reflexa* could possibly occur on the same mossy, dripping ledges as some of the ferns recorded. But on reflecting that no less an "orchid eye" than that of Alan Willows was involved, it must be admitted that there were none to be found. But it doesn't rule out their previous existence.

Within ten minutes ride (even in public transport) of Vaucluse is a park very familiar to members of the Society: Cooper Park, in a valley on the western slope of Bellevue Hill, is a lovely area of conservation of interesting native plants on a small scale. The Woollahra councillors deserve plenty of credit for its preservation.

Living close to the park has been a very enviable piece of luck over the past score of years, and my perambulations in times when I could not get further "bush" were most interesting. For many of the earlier years my peerings and recordings were at the native bees and a few species of ground orchids thereby. In actual fact the hymenoptera taken from Cooper Park and sent on to Tarlton Rayment included 27 species and sub-species of native bees. I was never able to locate any of the epiphytic species of orchids, and only three of the annual terrestrials. But these were in quite large numbers.

The Nodding Greenhood (*Pterostylis nutans*), the Mosquito Orchid (*Acianthus fornicatus*) and the Monk's Hood (*Cryptostylis erectus*) added their annual unobtrusive charm to the undergrowth But with the growth of the taller shrubs and their spreading on to the bush tracks came the demand for marginal clearing, and shovelling of accumulated sand and leafmould from the pathways. Probably because of their insignificance, difficulty of detection, seasonal disappearance, and understandable lack of ability of the workmen and gardeners to recognise them anyhow, the death knell (sorry for the cliche, but it sounds good) of the smaller species —*Pterostylis* and *Acianthus*—was tolled. Within one season the little Mosquito Orchid, which used to form a thick carpet along one of the northern slopes, had completely disappeared under heaps of leaves and sand; or the bulbs had been shovelled out to clear the grasses growing over the tracks. I can't find a single specimen these days. The Greenhood is passing to the same valhalla, and of the many small colonies I know only one, which was in quite vigorous flower during May and June of this year (1963); but its numbers had diminished.

The only one which has survived and maintained its population is the Monk's Hood (*C.erecta*), that strange orchid which depends for its fertilisation and propagation on the mating of a male Ichneumon fly with its flowers. Its survival is probably accounted for by its ability to abandon the open margins of the sandy tracks, where its leaves are short and strong, to be just as much at home under the tall and, fortunately, aggressive foliage of the Kunzeas

and Hakeas. It seems to be assured of a permanent place in the flora.

A very useful programme is proposed by the establishment and cultivation of many species of native epiphytic orchids in the trees of the city and suburban parks. This will be carried out by active orchid growers and societies. A lamentable feature, however, is that the evergreen epiphytes have an enormous popularity not enjoyed by the small and less spectacular ground orchids, which disappear briefly each year for a holiday underground, before they listen to the seasonal alarm clock of their individual species, and emerge to throw up a few flowers, grotesque and almost monochromatic in many species, but without exception, lovely to look at.

So——, I wonder if some of the few enthusiasts in this field could be induced to muster the bulbs, tubers, rhizomes—the things from which they grow — of *Pterostylis, Acianthus, Cryptostylis, Thelymitra, Corybas, Chilloglottis, Diuris,* and the other genera of earthlings, and establish them in suitable conditions in their own council reserves, or present them to the Botanical Gardens to be established in Hyde Park, the Domain and Wynyard Square. As an ex-tram conductor I was frequently tempted to offer the establishment of herpetological fauna in these places.

— ALEX. HOLMES

ACTINOTIS FORSYTHII

By "Observer"

In a recent lecture Mr. Colin Burgess informed members of the Katoomba Conservation Society that the small pink Flannel Flower was blooming abundantly all across the Narrow Neck at Katoomba. He described the plant as an annual and of uncertain occurrence. The plants were found in great numbers where a bulldozer had turned soil in making a fire trail along the peninsula. I can add that the plants have been seen by me on only three previous occasions and in two cases, possibly three, the plants were growing in disturbed soil.

It has been thought that these flowers needed a bushfire to make them bloom, but as this Summer was cold and wet, it seems likely that the seeds require open sunshine without competition from other species.

EVENING

No evening can be transcendently beautiful without cloud. Here the far clouds turn from gold to rose while the great wall of mist continues to drift along the peninsula being constantly blown up and back by the strong up current of air.

No colour film could capture the beauty of an evening like this,

for the feet rest on the earth's foundation, the skin feels the keen air and the occasional drop of water, while the ears are tuned to a thousand tiny sounds against the background of falling water and soft wind. To move so through such beauty is to become one with it, undisturbed by the trappings of civilization.

Far to the South the sky turns to yellow and pale green, while in the west the rose deepens to delicate shades of grey, as the earth is folded in the mystery of another night.

— "Observer"

A NEW QUEENSLAND BLENNY. (Pisces: Clinidae).

By G. P. Whitley.

A new species of Blenny from Heron Island, Queensland, is hereby named *Vauclusella acanthops*. It belongs to the family Clinidae, genus *Vauclusella* Whitley (1931, Austr. Zool. 6:324) but differs from its congeners by its scaleless head, spines over the orbit, scaly breast, long pectoral and caudal fins, and 16 or 17 spines in the second dorsal fin. Holotype (no. IB.4016) and five paratypes (IB.4023 and 4028) in Australian Museum, up to 44 mm. ($1\frac{5}{8}$ inches) long.

D.iii/xvi to xvii/8; A:ii, 19 to 20; P:15 to 16. Scales 34 to 37; lat. line with 16 to 18 tubes. Tr. 2 to 3/1/5 to 7. Head 3.4 and depth nearly 5in. standard length. Three conical spines over front of each eye. An orbital and a nasal tentacle. No predorsal scales. Pectoral fin reaching to below third dorsal fin.

Plain greyish-brown; no dark blotches. Spinous dorsal fins dusky.

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